LPAS SPEECH CODER USING VECTOR QUANTIZED, MULTI-CODEBOOK, MULTI-TAP PITCH PREDICTOR AND OPTIMIZED TERNARY SOURCE EXCITATION CODEBOOK DERIVATION

ABSTRACT OF THE DISCLOSURE

A method and apparatus for reducing the complexity of linear prediction analysis-by-synthesis (LPAS) speech coders. The speech coder includes a multi-tap pitch predictor having various parameters and utilizing an adaptive codebook subdivided into at least a first vector codebook and a second vector codebook. The pitch predictor removes certain redundancies in a subject speech signal and vector quantizes the pitch predictor parameters. Further included is a source excitation (fixed) codebook that indicates pulses in the subject speech signal by deriving corresponding vector values. Serial optimization of the adaptive codebook first and then the fixed codebook produces a low complexity LPAS speech coder of the present invention.